

3/5/2018

[Dart Hawkesbury] Job Sheet - Gagnon-Donovan, Michelle

19-7550



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

003082

D407-667-205
Job Sheet 173572



Part No: D407-667-205

Job Qty: 1 ea

Part Name: Aft Crosstube - High 407



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 3/5/18

Job Tracking No:

Due Date: 3/23/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: DWG REV G IPP Rev:C 05.09.02 Add holes for comp. w/ Bell Skids KJ/JLM IPP Rev:D Add Magnobond,Rubber Cushion,Clamps 07-02-19 JLM IPP Rev:E 08-05-22 add comment seq. 6 & QC15 & QC5 DD verf:EC IPP Rev:F 08-06-12 add comment seq. 24 DD verf:EC IPP Rev:G 08-08-19 revE per dwg DD verf:EC IPP Rev H 09.01.06 ECN 08-562 EC verf:DD IPP Rev:I 10.04.07 revise route seq. in bom DD verf:JLM IPP Rev J 11.04.26 removed abrasion strip ecn 11-551 EC verf:DD IPP REV:K 11.10.03 DEOD407-667-245-F-2 DD verf:EC

Ship Via:

Bill of Materials

TRW 5027918



Container No: S061631



Part: D407-667-205

Job No: 173572

Serial No/Batch: S061631

Revision:

Inspector:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 04/17/18

D407-667-205/173572/S061631

P.T.O.

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		3/20/18	0.00	0.00	Start Up Stores/Pkg-1		GP
110	Packaging	1 pcs		3/20/18	0.00	0.00	Packaging1-4		GP
120	CNC Bend Skidtube	1 pcs		3/20/18	1.99	3.33	CNC Bend Skidtube		GP DAS
130	QC	1 pcs		3/20/18	0.00	0.00	QC15		38
140	Crosstubes	1 pcs		3/20/18	0.00	3.47	Crosstubes-2		GP 9-89
150	HandFXtube	1 pcs		3/21/18	0.00	0.91	HandFinish5		GP
160	QC	1 pcs		3/21/18	0.00	0.00	QC7-3		213
170	QC	1 pcs		3/21/18	0.00	0.00	QC5		213
180	Outsource	1 pcs		3/22/18			SKY002-VC P1039639		C21 8104/29 AC 84424
190	Packaging	1 pcs		3/22/18	0.00	0.00	Packaging2		AT P22424
200	QC	1 pcs		3/22/18	0.00	0.00	QC6		38
210	SprayPaint	1 pcs		3/22/18	0.00	1.39	Spray Paint		AB 22000
220	QC	1 pcs		3/22/18	0.00	0.00	QC14		AB MAY 02 2018
230	Crosstubes See attached	1 pcs		3/23/18	0.00	3.47	Crosstubes-2		AB MAY 08 2018
240	QC	1 pcs		3/23/18	0.00	0.00	QC5		38
250	Packaging	1 pcs		3/23/18	0.00	0.00	Packaging1-4		AB DAS
260	QC	1 pcs		3/23/18	0.00	0.00	QC4		58 DAS
265	DC	1 pcs		3/23/18	0.00	0.00	DC		9-89 58
270	Packaging	1 pcs		3/23/18	0.00	0.00	Packaging3-2		9-89 58
280	QC21-FG	1 Ea		3/23/18	0.00	0.00	QC21		MAY 08 2018 9-89 MAY 08 2017

Part Op 120 - 1-Bend tube as per Dwg D407-667-245 using CNC bender program 407 Aft and Folio 21

Descriptions: 140 - ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED BY: ***** 1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill all (3) top holes. Holes facing inboard. Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245 2- Drill fwd rivet holes using drill Jig DT8787 fwd as per Dwg D407-667-245. Note: FWD side has 3X top holes facing Inboard. 3- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for paint. 4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2 top holes ONLY plug most bottom hole to prevent accidental drilling. Drill holes and ream using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill only the top (2) holes. Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245 5-Drill aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-245. Drill only the top (2) holes. 6- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for paint. 8-*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***Debur & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-245

150 - ***IMMEDIATELY AFTER GRINDING***

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 0380

190 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

200 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Prime inside and outside crosstube as per DEO D407-667-245 and QSI 005 4.2 ***Mask underside of crosstube as shown*** 3- Apply clear coat as per dwg Clear Coat Batch: PRIMER 138687 clear 138832 Paint 138819

220 - Then,Wrap in plastic bag to protect from scratches

230 - 1- Install chaffing shield as per D407-667-245 using DT10096 to establish 8.90 dimension.Top holes should be facing up. ****Ensure chaffing is to be position "overlap" AFT**** A/R Proseal 890 Batch: 138784 EXP: 9/18 2- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 3-Install support with Scotch-Weld DP460 and install clamps as per Dwg D407-667-245 using installation jig DT9025. Torque clamps as per dwg A/R Scotch-Weld DP460 Batch: 137679 EXP: 6/18 ***LET CURE FOR 24 HOURS*** CURE TIME: START: 18-5-2 FINISH: 18-5-2 4-Install nut plates as per Dwg D407-667-245. Touch-up rivet heads with Imron paint.

240 - ***RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURE FOR 24HOURS AS PER DWG DEO***

265 - Photocopy bluefile and create labels as per PPP D407-667-205 CHG009

270 - Identify and in kanban rack

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D407-667-205TRN	Crosstube Turning Detail	1 Ea (1 ea)	90-Start up Operation	
D2873-043	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes	
D2873-045	Nut Plate Assembly	2 Ea (2 ea)	230-Crosstubes	
D2894-1	2.75 Support	1 Ea (1 ea)	230-Crosstubes	
D3190-1	Chaffing Shield	2 Ea (2 ea)	230-Crosstubes	
D3595-075-430	Rubber Cushion - 0.75" Wide X 4.30" Long	2 Ea (2 ea)	230-Crosstubes	
MS20601-AD4W8	Rivet	14 Ea (14 ea)	230-Crosstubes	
MS21920-22	Clamp	4 Ea (4 ea)	230-Crosstubes	
MS21920-25	Clamp	2 Ea (2 ea)	230-Crosstubes	
NAS1149D0563J	Washer	18 Ea (18 ea)	230-Crosstubes	5039036
AN5-10A	Bolt	10 Ea (10 ea)	250-Packaging	5017095
AN5-32A	Bolt	4 Ea (4 ea)	250-Packaging	5015692
AN5-34A	Bolt	4 Ea (4 ea)	250-Packaging	5019410
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging	5041167

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D407-667-205TRN	1	4	0
230-Crosstubes	D2873-043 5050177	2	21	0
	D2873-045 5018818	2	7	0
	D2894-1 5051588 F149816	1	5	0
	D3190-1 5056865 138928	2	51	0
	D3595-075-430 5053784	2	56	0
	MS20601-AD4W8 5057036	14	42	0
	MS21920-22 5058788	4	91	0
	MS21920-25 5058788	2	108	0
	NAS1149D0563J	18	1,290	0
	AN5-10A	10	195	0
250-Packaging	AN5-32A	4	114	0
	AN5-34A	4	109	0
	MS21042L5	4	849	0

Part Specifications				
Specifications could not be found.				

Plex 3/5/18 10:07 AM Dart.Gagnon.Michelle

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WORK ORDER
NO. 173572
MAR 05 2018

Item	QTY	PART NUMBER	DESCRIPTION
	X	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
1	1	D6011-115	CROSSTUBE
2	2	D2873-043	NUT PLATE
3	2	D2873-045	NUT PLATE
4	1	D2894-1	SUPPORT
5	2	D3190-1	CHAFING SHIELD
6	2	D3595-063-430	RUBBER CUSHION
7	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
8	4	MS21920-22	CLAMP
9	2	MS21920-25	CLAMP (OR MS21920-24)
10	AR	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD
11	AR	PROSEAL 890	SEALANT

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6011-115
FINISHED LENGTH = 112.91±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT CROSSTUBE PER DART QSI 005 4.2
FOR HATCHED AREAS (ZN A6-2), MASK AS REQUIRED
TO APPLY PRIME AND APPLY CLEAR COAT ONLY
- TOLERANCES ARE PER DART QSI 019 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON INSIDE OF CLIFF USING VIBRATING STYLUS.
- WEIGHT: 27.7 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3190-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEAL D3190-1 CHAFING SHIELDS ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS 60 TO 70 DEGREES FROM BOTTOM OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- TORQUE CLAMPS 80 TO 100 IN-LB. TORQUE CLAMPS ON D3190-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

G	INCORP. DEO'S D407-667-245-F1/F2 (ZN D8-1, A8-1, D5-2, B8-2, C8-2); 8.80 WAS 8.53 (ZN D5-2); TORQUE REDUCED FOR CHAFING SHIELD (ZN A8-1); FINISH REVISED TO ALLOW MANUFAC. FLEXIBILITY (ZN C8-1)	RF	15.03.20
F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C8-3, C4-3 & D2-3)	RF	08.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.80 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PARM08-21 AND ECR#1226	MB	08.07.24
D	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6368, ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
B	ADD CHAFING SHIELD	CP	03.05.21
A	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED	RF		
MFG. APPR.	RF		
APPROVED	RF		
DE APPR.	RF		
DATE	15.03.20		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

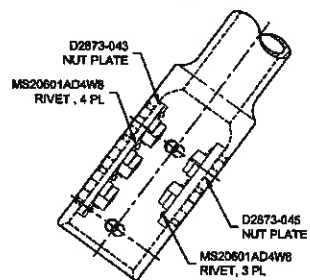
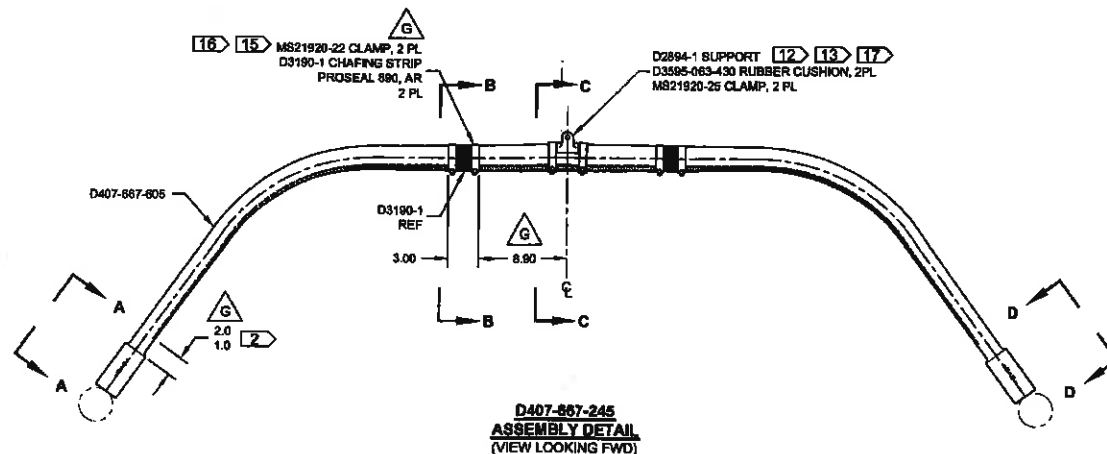
DRAWING NO. REV. G
D407-667-245 SHEET 1 OF 4
TITLE SCALE
CROSSTUBE ASS'Y (407 HIGH AFT) NTS

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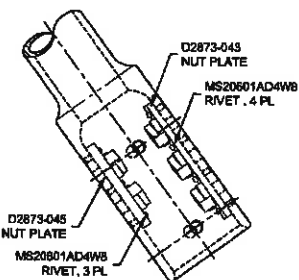
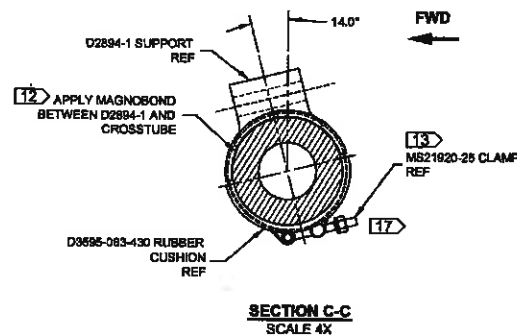
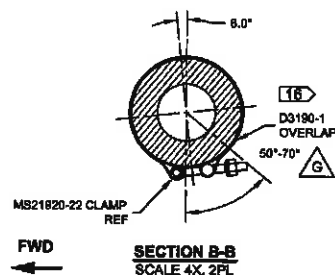
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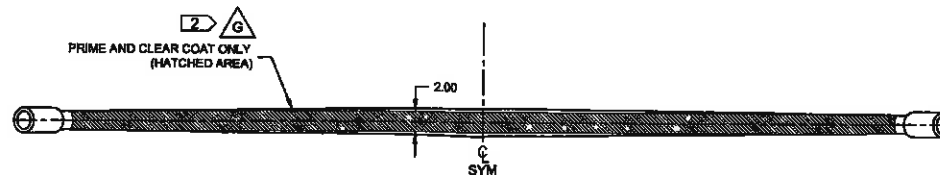
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VIEW A-A CUFF DETAIL
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VIEW D-D CUFF DETAIL
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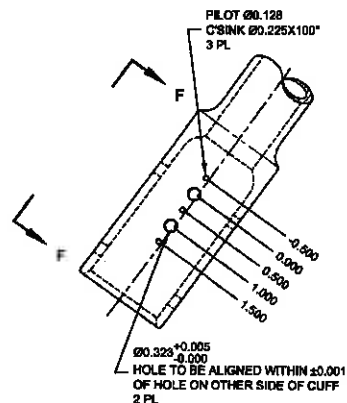
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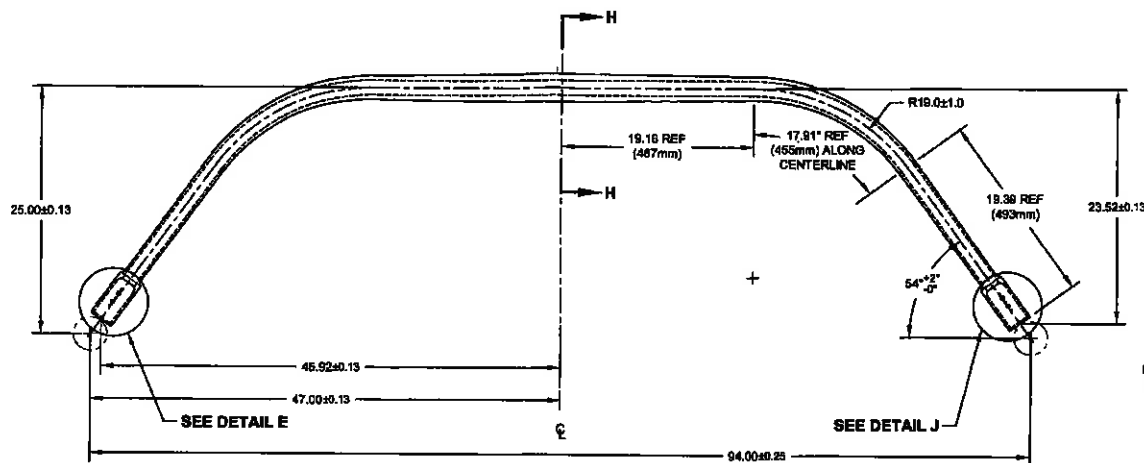
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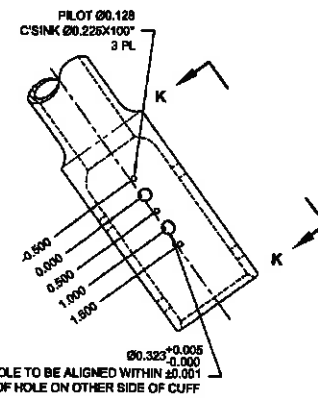
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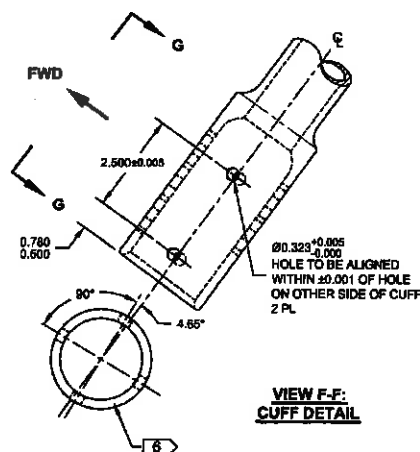
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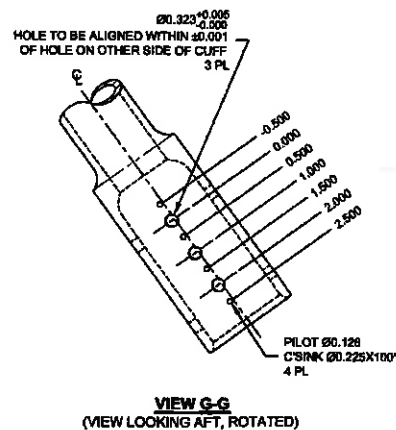
D407-667-605
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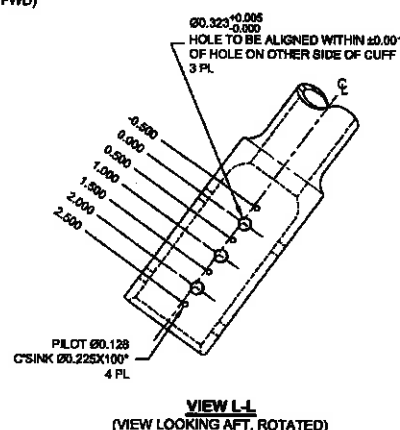
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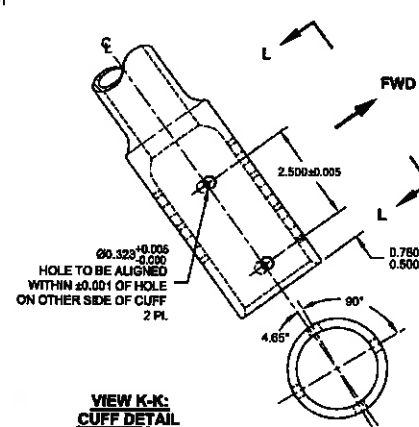
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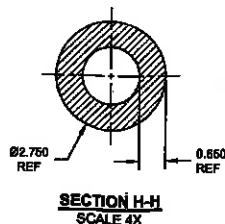
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VIEW L-L
(VIEW LOOKING AFT, ROTATED)



VIEW K-K:
CUFF DETAIL



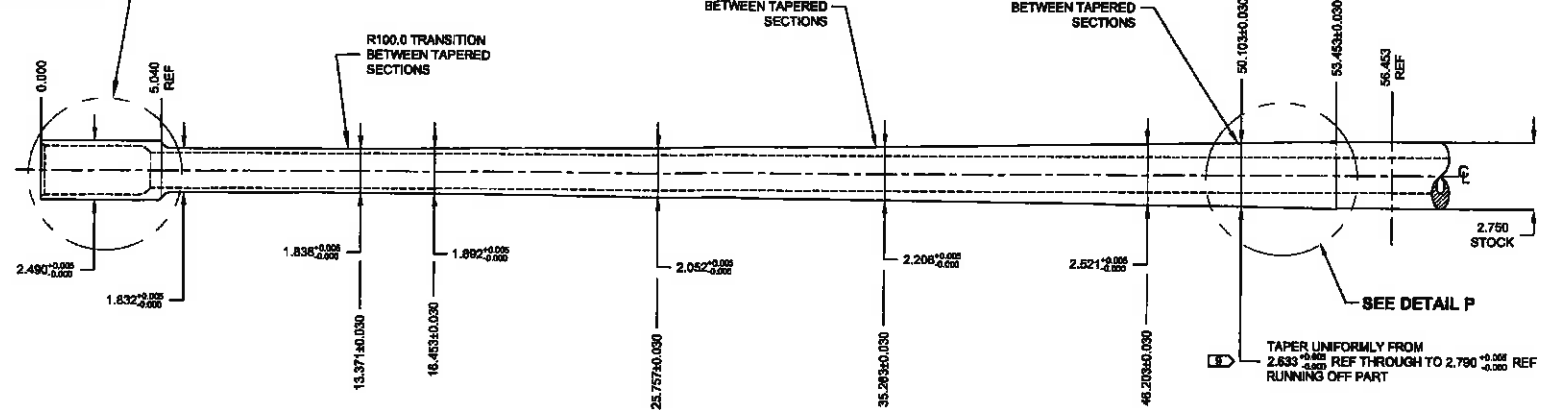
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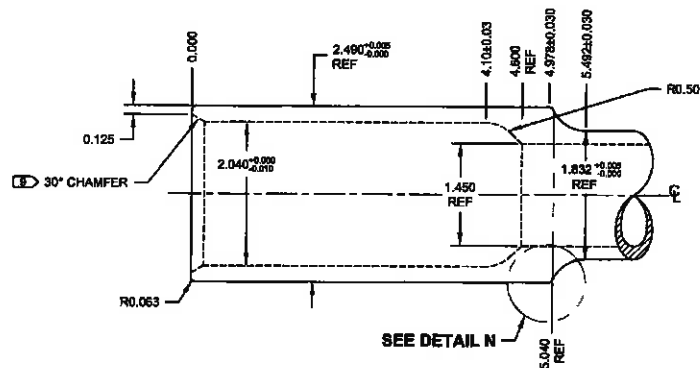
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MFG. APPR.	RF	D407-667-245	SHEET 3 OF 4
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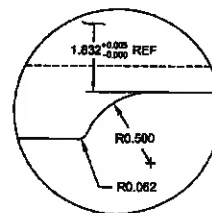
SEE DETAIL M



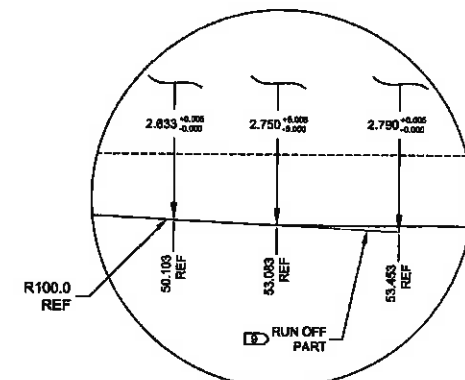
D407-687-245 MACHINING DETAIL



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DETAIL N: CUFF TRANSITION
SCALE 2X



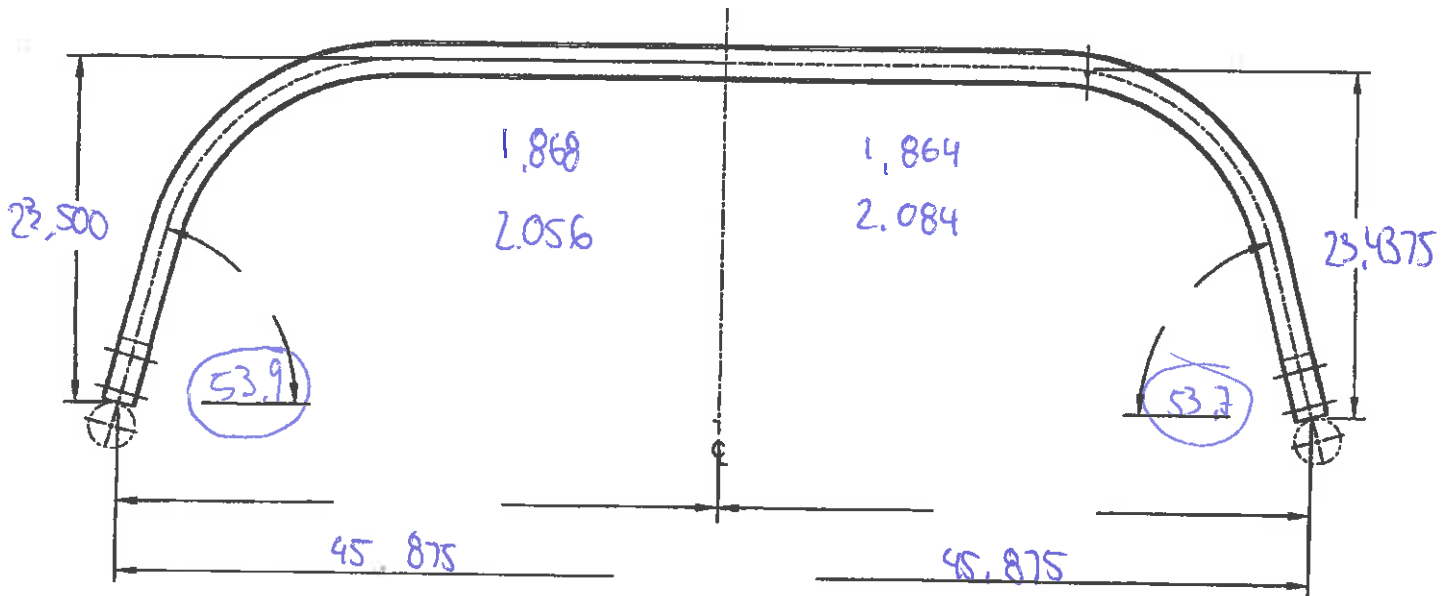
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DART AEROSPACE LTD		Work Order: 173572
Description: Crosstube High Aft (407)		Part Number: D407-667-205
Inspection Dwg: D407-667-245	Rev: G	Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92.100
Bending Passes	6	--
Crushing	--	6%



	Side A	Side B
Bending Passes	26	26
Crushing	4.5%	5.6%
Comments		

QC15 Inspection	DAS 38 0.88
Date	APR 18 2018

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.22	Dwg Rev updated	KJ	
C	11.08.22	Dimensions updated	KJ	
D	11.09.30	Dimensions updated	KJ	
E	12.04.16	Added bending, crushing dimensions	KJ	
F	15.05.14	Dwg Rev updated	KJ	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039659**

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO039659
PO Date: 4/20/18
Due Date: 4/24/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	173574	D407-667-205	Aft Crosstube - High 407 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 0380	Firmed	4/24/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173573			Firmed	4/24/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173572			Firmed	4/24/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	173575			Firmed	4/24/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
Sub Total:						4	0	4		\$835.00

Grand Total: \$835.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 4/24/18 7:51 AM dart.lavoie.chantal

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

W/O #: MWO35731	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO039659
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON FOUR AFT CROSSTUBES - HIGH
P/N : D407-667-205 AS PER PO : PO39659

1 - JOB SHEET : 173572 2 - JOB SHEET : 173573
3 - JOB SHEET : 173574 4 - JOB SHEET : 173575

Action Taken:	Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT AS PER ASTM E-1417M-13 NO CRACK FOUND PEN ZL-37, MPO13139, CLEANER SKC-S MPO15030 , DEV. MPO15030 , EMU.(ZR-10B,MPO15896) BLACK LIGHT - M20186	APR 19 2018 APR 20 2018 DAS 38 9-68	LM [278]

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp	Date:
Name: Luca Marchetta	[278]	APR 20 2018

DQA: _____ Date: _____

QA Closed: 12 Date: Oct 24/19**WORK ORDER NON-CONFORMANCE / UPDATE**Work Order update only ☐

Work Order: <u>173572</u> Part No. <u>D407-667-205</u> NCR No. <u>19-7550</u>		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube</td><td>☐</td> <td>Cross tube</td><td>☒</td> <td>Water Jet</td><td>☐</td> <td>Engineering</td><td>☐</td> </tr> <tr> <td>Machining</td><td>☐</td> <td>Small Fab</td><td>☐</td> <td>Prod. Eng. Coord.</td><td>☐</td> <td>Quality</td><td>☐</td> </tr> <tr> <td>Thermoforming</td><td>☐</td> <td>Finishing</td><td>☐</td> <td>Rec/Store/Packaging</td><td>☒</td> <td>Other</td><td>☐</td> </tr> <tr> <td>Large Fab</td><td>☐</td> <td>Composite</td><td>☐</td> <td>Supplier</td><td>☐</td> <td></td><td></td> </tr> </table>				Skid-tube	☐	Cross tube	☒	Water Jet	☐	Engineering	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐	Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☒	Other	☐	Large Fab	☐	Composite	☐	Supplier	☐																																																																																																		
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Bom calls for D3595-075- 663 ⁴³⁰ , Dug calls for D3595-063-430. No D3595-063-430 in stock.				Use D3595-063-430 or D3595-063-450, parts are equivalent. ^{0.260} 0.420 length difference has no effect on function of rubber cushion.																																																																																																																																			
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me 18 Jan 2019

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

Date:

Work Order update only

Work Order: <u>1735-2</u> Part No. <u>P407-662-201</u> NCR No. <u>19-7167</u>		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☒ Machining ☐ Small Fab ☐ Thermoforming ☐ Finishing ☐ Large Fab ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging Supplier ☐		Engineering Quality Other ☐					
Date: <u>18/4/17</u>		Step #: <u>120</u>		QTY Effective: <u>1</u>				MRB (QSI042) Approval DAS 12 9-89 <u>18/4/17</u>							
Description Work Order Deviation <u>Angles are under tolerance after bending</u>				Disposition <u>Acceptable. Will not cause fit issue, within what has been accepted in the past without issue.</u>				Completed By DAS 12 9-89 <u>18/4/17</u>							
								Lead hand / Supervisor Approval Verification DAS 9 2-90 <u>18-05-17</u>							
								QC / QA Coordinator Approval DAS 9 <u>18-05-17</u>							
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☒ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Bending ☒ Set-up ☐ Centre Not Concentric ☐ BOM/Route ☐ Cracks ☐ Broken/Damage/Defect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Cuffs ☐ Contamination ☐ Crushing ☐ Countersink ☐ Heat Treat ☐ Cut Too Short ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Marks/Chatter ☐ Drill Holes ☐								Power Loss/Surge ☐ Positioned Wrong ☐ Folio/Program ☐ Outside Dimensions ☐ Grain ☐ Over/Under tolerance ☐ Weld ☐ Part Incorrect ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Out of Sequence ☐ Part Moved ☐ Off-set ☐ Drawing ☐ Misabeled ☐ Finish ☐ Fit/Function ☐ Misread ☐ Misaligned/off center ☐ Turning Sequence ☐			
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